

Claims

1. Copper agonist, characterized in that it binds to the copper binding site of the amyloid precursor protein (APP) and/or reduces or prevents the release of the amyloid A β peptide.
2. The copper agonist according to claim 1, wherein divalent metal ions, oligopeptides, oligonucleotides, oligosaccharides, nucleotide analogs, chemical substance libraries or low molecular natural substances from microorganisms or plants are concerned.
3. Medicaments which contain the copper agonist according to claim 1 or 2, optionally in combination with a pharmaceutically acceptable carrier.
4. Use of the copper agonist according to claim 1 or 2 for the production of a medicament for the prevention or treatment of Alzheimer's disease.
5. A method of identifying a copper agonist which binds to the copper binding site of APP and/or exerts an inhibitory effect on the release of the amyloid A β peptide, which is characterized by the steps of:
 - (a) contacting APP or a fragment thereof carrying the copper binding site with various concentrations of a compound which potentially has the above effect,
 - (b) detecting a decrease of the A β protein.
6. The method according to claim 5, wherein the decrease of the A β protein is detected by means of ELISA or immunoprecipitation from cell culture systems.

7. The method of identifying a copper agonist which binds to the copper binding site of APP and/or exerts an inhibitory effect on the release of the amyloid A β peptide which is characterized by the steps of:
- (a) contacting of APP or a fragment thereof carrying the copper binding site with a dissolved or immobilized substance library or with low molecular substances from microorganisms and/or plants,
 - (b) when a dissolved substance library or liquid low molecular substances are used, immunoprecipitation of the competitive or non-competitive copper binding site/ligand complex from the solution with antibodies specific to APP or the fragment thereof or, when an immobilized substance library is used, release of the ligand from the copper binding site/ligand complex by the addition of copper salts,
 - (c) identification of the ligand, and
 - (d) selection of ligands which after binding to the copper binding site of APP exert an inhibitory effect on the release of the amyloid A β peptide, wherein step (d) can optionally precede step (c).
8. The method according to claim 7, wherein step (d) comprises the incubation of mammalian cells stably transfected with APP695 with the ligand obtained from steps (a) to (c) and the determination of the production of the amyloid A β peptide with polyclonal or monoclonal antibodies.
9. The method according to claim 7, wherein step (d) comprises the administration of the ligand obtained

from steps (a) to (c) to transgenic mammals which express the human amyloid A β peptide, the collection of a sample from the CNS or the blood and the determination of the production of the amyloid A β peptide with polyclonal or monoclonal antibodies.